

POLITICAL CONSIDERATIONS IN CARTOGRAPHIC MAPS

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Abstract. Maps and image maps are important and widespread. Professional users of a map are interested in its geometric accuracy and in the glossary in order to understand the standards and rules used in the preparation of the map and the limitations of its use. Non cartographic charts and sketches that are sometimes used for propaganda or for illustrations are not discussed in this article. The article describes the means and tools used by the cartographer in the preparation of maps. This article does not cover all options but focuses on the use of basic tools for the presentation of political subjects in maps. The significance of such presentations with regard to sovereignty and boundaries is discussed and the use of maps as evidence at ICJ and International Tribunals is analyzed.

Keywords: cartography, political maps, boundary disputes

1. Introduction

Maps are graphic descriptions of the real world. Professional maps follow strict recognized rules. They express mathematic-geometric relations between the presentation of the features in the map and their location in the real world. Cartography integrates today advanced technologies in the creation of maps. The outcome may be a physical map, a political map or a thematic map. This article deals with political maps and with political considerations in physical and thematic maps. The relevant basic factors characterizing a map include: a recognized grid of coordinates and a nominal scale to enable precise measurement of features on large and medium scale maps (small scale maps may use projections which keep some properties while distorting others); accuracy, following recognized standards; landscape features, the selection, richness, density, generalization and position of which define the quality of the map; map symbols, that represent real world features and other entities, the relative size, line thickness, color and position of which may influence strongly the interpretation of the map user; map generalization which distorts the nominal ratio between the real world sizes and the map presentation diverging from the defined map scale; and the names and other verbal information which are very important regarding the political aspect of maps.

The cartographer, editor or publisher of a map may give a political interpretation and definition of a territory by using cartographic means, including place names, symbols, colors, types of lines etc. The location on the map may also be very important. For example: the use of a different color of a territory on a political map will be interpreted as a different state (e.g. the states formed after the disintegration

of the Soviet Union and Yugoslavia); the use of different names for the same territories by different publishers (e.g. Israel and Palestine, Falklands and Malvinas, Persian Gulf and Arab Gulf). Political interpretation in maps regarding boundary lines is analyzed later on in this article. The cartographer has to select features to enable a clear and readable map in accordance with the scale of the map. As a result, part of the features in the real world will not appear on the map. Thus, the contents of the map is not an absolute representation of the real world even not at the time of the creation of the map and not later on when the new features are not updated. The selective character of the cartographic work enables the cartographer to input important messages, which may not be recognized by an innocent reader. Monmonier analyzes widely such options in his book *how to lie with maps* (Monmonier, 1996). Selected options are elaborated in the article and examples and illustrations of maps from all over the world are given. Thematic maps, that are widely used, intend to present specific themes. The geographic map is used in these maps as background. In these maps the use of symbols and colors is emphasized. A thematic map may be produced in unusual projections. Shlomi (1978) presented multi-focal maps. Thematic maps may present features in distorted proportions, like sizes of countries as a function of selected characteristics. The map in Figure 1 shows the sizes of countries as a function of their Gross Domestic Product.

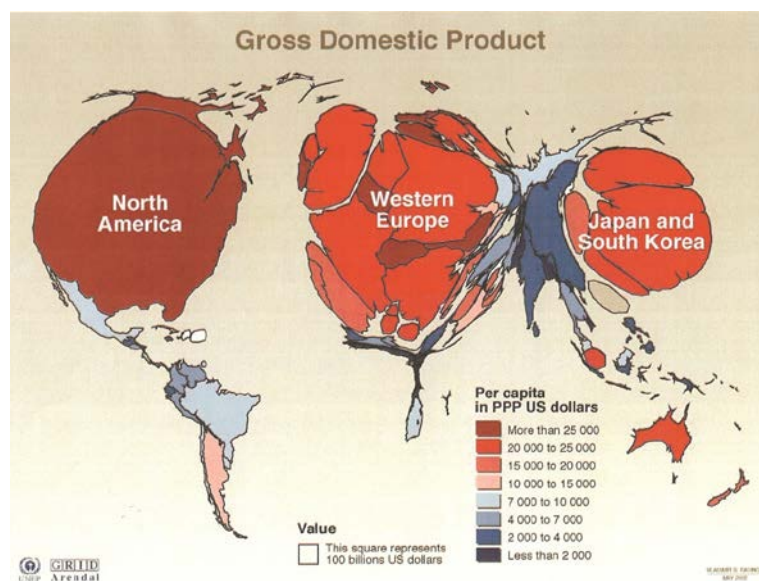


Figure 1: Map of the world – The size of states shows the relative size of their GDP.

Source: Enemark (2008) on the base of UNEP

Due to the wide distribution of maps in the internet and their "objective" image, problems of new sorts are raised. Such example was published a few years ago, when Soldiers of Nicaragua invaded into territory of Costa Rica claiming that an island on the River San Juan, which is known as territory of Costa Rica, belongs to

Nicaragua as seen on Google map. This international military incident shows the sensitivity, responsibility, and importance imposed on the cartographer when preparing the map.

2. The basic factors of a map

The mapmaker can input his interpretation through a variety of components. We will review briefly the relevant ones and then introduce a few examples of political expressions in maps. The basic elements of a cartographic map include:

A recognized grid in a defined scale. The grid enables accurate measurement of features in large and medium scale. Small scale maps are produced sometimes in projections which fit special purposes and cover very wide areas and their grid does not fit measurement. Projections of maps may preserve direction, shape and area or distances. **Accuracy.** International standards and tradition define the correlation between the map scale and its accuracy. Larger scales demand better accuracy and higher density of features. **Landscape features.** A map is considered of higher quality when it is more detailed and the location of its features is more accurate. The natural and man-made features and their names are the main contents of the map and present the geo-information of the real world. Their selection, clarity of presentation to the user, reliability, and revision status, express the quality of the map. The richness of features, their density and accuracy depend on the sources of data and on the mapping process, including the standards, the selection and the generalization. The quality of an original map deteriorates through time if the map is not updated properly. **Symbols.** They are the map language and are used by the cartographer to describe graphically the landscape features, boundaries and geo-information. The map reader has to learn them in order to read the map properly. There is no universal standard for map symbols. The glossary of the map shows the symbols used and their meanings. Generalization is represented by symbols. The relative size of a symbol or a name usually represents relative importance. The location of a symbol or a name is also important but in small scale maps they may be shifted to empty spaces due to high density of features in the exact location. The generalization process which makes use of symbols has influence on the fit of map to high quality standards due to distortions which are a result of the selected size and location of artificial symbols (A road 10m wide may be shown on a 1:500,000 map at 0.5mm width line which means 250m in that scale). But the main problem of generalization is absence of data in the map. Due to legitimate selection of data by the cartographer he may select out data, which is less important at the time of the map preparation but may be very important in the future. In such case the future user will not know if a specific feature existed at the time of the map production or if it was selected out. **Names.** They add to map features geographic, political and historic references. The first one is the map name. Other names refer to the contents of the map: countries, cities and settlements, roads, installations, historical, religious

and archaeological sites, etc. Due to lack of space, part of the names will be selected out, depending on the scale of the map and on the theme and purpose of the map. For instance, in a travel map the emphasis will be on inclusion of tourist and excursion sites. The language is an important aspect regarding the names. The use of it has a political meaning. In a few countries and in publications of international organizations, like the UN, the names on maps are published bi-lingual or multi-lingual. In such cases the cartographer has to reduce dramatically the features of the map in order to leave space for names. The absence of names may also be of great importance. This may not be only a result of innocent selection made by the cartographer but a result of political consideration.

3. Expressions of political meaning in maps

The editor or publisher of a map may include political messages by the following means: The political definition of an area; the definition of a boundary of a political entity; the use of colors and names of places.

3.1 The use of names and colors

The use of names: A name may distinguish an area as a separate political entity. Such presentation may be augmented by a delineation of the area by a specific line symbol. The appearance of a name of a state on a large scale map may indicate recognition of the legitimacy of such a state or the legitimacy of a certain regime. The absence of a name has also political connotation (Figure 2). **The use of colors:** Such use is common in political small scale maps. In such maps states appear in different colors, only names of large countries usually appear and the boundaries are distorted. The appearance of identical colors of attached countries may indicate the perception of both countries as one political entity or state. During the colonial period and in the period of USSR and Yugoslavia world political maps used to show many countries printed in the same colors (Figure 3). Since the disintegration of USSR, each independent state is shown on maps in a different color and the Russian Federation in a different color (Figure 4).

3.2 The delineation of boundary lines

The options of a political expression in this regard refer to the existence or absence of a boundary line; to the location of the line; to the existence of more than one line; or to the type of the line. The glossary of a map shows a series of symbols which refer to the status of boundary lines, from international boundaries to cadastral boundaries. An official map of a state is usually considered as reflecting the position of the publishing state in a case of a dispute when only one position is presented. Sometimes in such a case there is a note indicating the existence of a dispute. In many cases boundary lines are wrongly presented because of defective mapping or



Figure 2: Maps showing different names of a political entity (Israel on the left and Filastine in the middle), different names of cities (Jerusalem on the left and right and Al-Quds in the middle) using three languages (Hebrew, English and Arabic). The types of boundary lines are also different. Sources: The New Atlas of Israel (left), An Arabic atlas (middle), Hammond's World Atlas, 1955 (right)



Figure 3: USSR and Yugoslavia - flat colors
source: Hammond's World Atlas, 1955



Figure 4: Separate colors after dismantling
source: Rand McNally Illustrated Atlas, 1993

cartographic mistakes. The recommended way to evaluate the accuracy of a location of a boundary line, after an evaluation of the quality of the map itself, is to measure distances between turning points on the boundary line and well defined permanent features on the map. Transferring the data from a poor quality map to a precise map

or for demarcation on the ground, may produce more than one possible line. Kadmon (1993) analyzed 107 maps that were published between the years 1906-1982 with regard to the 1906 Turco-Egyptian boundary (today between Israel and Egypt). He found significant differences due to geodetic reasons, scales, projections, accuracy of mapping, accuracy of boundary interpretation and delineation, etc. His conclusion was that maps are not a reliable source for the definition of a boundary line. Notes referring to the boundary line on the map or in the glossary, regarding the symbol or a reference agreement or document, are very important. Such information may support the delineated line or clarify the status in certain cases, like when there is a remark that the line is temporary or under dispute. The appearance of more than one line is also an evidence of a dispute. In military agreements two lines may indicate a separation zone. The absence of a separation line in case of a dispute may indicate a claim for sovereignty by the publishing state.

3.3 Political expressions regarding the use of names

Political meaning of names is derived from the language used, from the connotation between a place name and its political context, from its relevance to the map, from its location or absence. Maps published by a state are usually in the official language. In some cases (like in Canada), due to political reasons, maps are bi-lingual in spite of the damage to the cartographic quality of the map. An ethnic minority fighting for independence tries to give expression to its language and traditional names. This is also used for education and documentation of cultural legacy. An important step of newly independent states was to prepare maps in their own language. A change of regime also led to change of names, like the change of Saint Petersburg to Leningrad by the Communist regime and back to Saint Petersburg after the disintegration of USSR and the fall of the Communist regime in Russia. The names of districts are changed when they are transferred from one state to another. An example to such change was when German Silesia and its main city Breslau were transferred to Poland that changed the names to Shlezia and Wroclaw. The change of names is done on maps but the old population not necessarily forgets the old names.

The situation is different in countries that are not involved in international political conflicts. Most countries adopt in their maps versions of names that are common in the world. For the last decades the common interpretation is adopted by the UN. The UN committee of names discusses the use of geographic names and tries to adopt the names that member states adopt in their territories and not to take part in disputes. There are difficulties in names of open seas.

The location of a name on the map is the cartographer's decision, but should not be far from the real place. This is not always the case on historic maps in areas of conflict. Geographic descriptions and the use of geographic names were a common method during the 19th century and the beginning of the 20th century for the

definition of boundaries. Today, the definition and solution of disputes regarding historical boundaries requires tracing historic geographical descriptions and names of the relevant time. This gives importance to relevant old maps, when historic national symbols and related religious and holy places are involved.

4. Examples

4.1 Recognition of political status

China does not recognize Taiwan as an independent state. Israel is a UN State member for over sixty years but its name does not appear on many maps produced by Arab States, including states with which Israel signed Armistice and Peace Agreements. In many of these maps the name Palestine covers the area of Israel (Figure 2, middle map), though on many maps of the Palestinian Authority itself the name Israel appears. The Turkish Republic of Northern Cyprus is recognized only by Turkey and appears on Turkish maps as an independent entity. Turkey does not recognize Cyprus as representing the whole island under its sovereignty while Cyprus shows the whole island under its sovereignty and marks the northern part as occupied by Turkey.

4.2 Political use of names

The Great Powers used to impose their culture in conquered areas. This was accompanied in the past by population transfer. Both the conquering power and the conquered nation used to give their names to places and the old names used to transform between cultures and languages. A wide wave of changes of country names during the second half of the 20th century, followed the end of WW II, due to the birth of new states after being freed from colonialism. Many of these changes were in Asia like Ceylon to Sri Lanka, Burma to Myanmar, Malaysia was formed from the unitization of Malaya, Sarawak and Sabah, Palestine under the British Mandate changed to Israel. Many changes were later on in Africa like North Rhodesia to Zambia, South Rhodesia to Zimbabwe, Upper Volta to Burkina Faso, Dahomey to Benin, Nyasaland to Malawi, etc. (Figure 5). The disintegration of Yugoslavia formed Serbia, Croatia, Slovenia, Bosnia Herzegovina, Montenegro, Macedonia and Kosovo (Figure 4). Sometimes a prefix is added to a name to express the political or religious character of a regime. This was common in the communist period when relevant regimes added the words popular socialist republic to their name. Iran changed its name to The Moslem Republic of Iran. Libya's name until 2011 was The Great Socialist People's Libyan Arab Jamahiriya. The dispute between UK and Argentina over the islands in the Pacific finds also expression in the names: Falklands for UK and Malvinas for Argentina. The sea between Japan and Korea is called in most maps



Figure 5: Example of changes of names of countries after independence. Sources: Hammond's World Atlas, 1955 (left); Rand McNally, Illustrated Atlas, 1993 (right)

Sea of Japan but in Korean maps it is called East Sea. Koreans show Japanese maps of the 1850's on which the sea is called Joseon Sea which was one of the names of Korea (The name of the ruling dynasty). The Persian Gulf has three main names: The Persian Gulf, The Arab Gulf (Al Khaleej Al-Arabi, Al Baher Al-Arabi) and The Gulf (Figure 8). In all Arab atlases it is called either The Arab Gulf or The Arab Sea. Since 1991 the name The Gulf is commonly used. In 1999 The UN committee on geographic names published a circular guiding the use of the name The Persian Gulf for the sea area between Iran and the Arab Peninsula - preferring the international traditional name - and the use of the name The Gulf for the area surrounding the sea area (UN, 1999). The UN guidance ignores the term Arab Gulf but approves recording in the UN files any term which is used by a speaker or a Government in their speeches or documents.

4.3 Boundary line disputes

There are claims of states regarding an initial delimitation of an international boundary and there are claims referring to restoration of an historical boundary line. The boundary line defined in 1939 between Turkey and Syria leaves in Turkey the district of Hatai (called also Alexandretta or Iskenderun). This line is common on most maps except most maps of Arab countries which include this district in Syria in spite of Syrian confirmation to Turkey a few years ago (Figure 7). Part of the Kuril islands between Russia and Japan are under dispute between the two states as an example of a few other disputes regarding islands between Japan, Korea, China and

other countries in this part of the Pacific. Disputes regarding boundary lines that find expression on maps still exist all over the world.

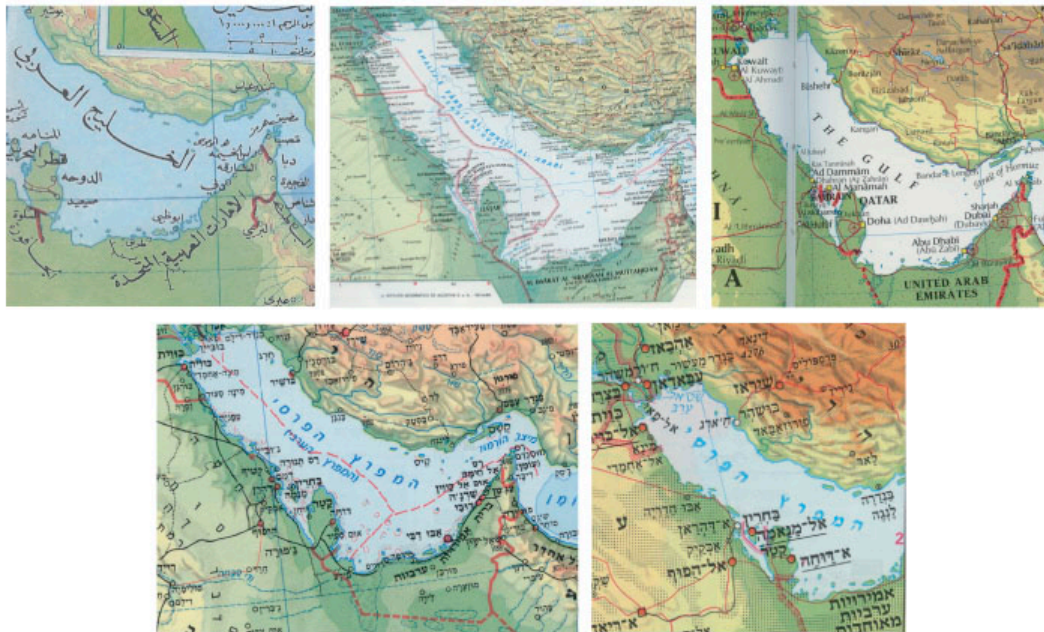


Figure 6: Different names of the Persian Gulf. Sources: An Arabic Atlas, 2006 – The Arabic Sea (upper left); Rand McNally, 1993 – The Persian Gulf, The Arab Gulf (upper middle); Collins, 1997 – The Gulf (upper right); Yavneh New University Atlas/ Brawer, 2003 – The Persian Gulf (The Arab Gulf) (lower left); Atlas Carta, 1996 – The Persian Gulf (lower right)

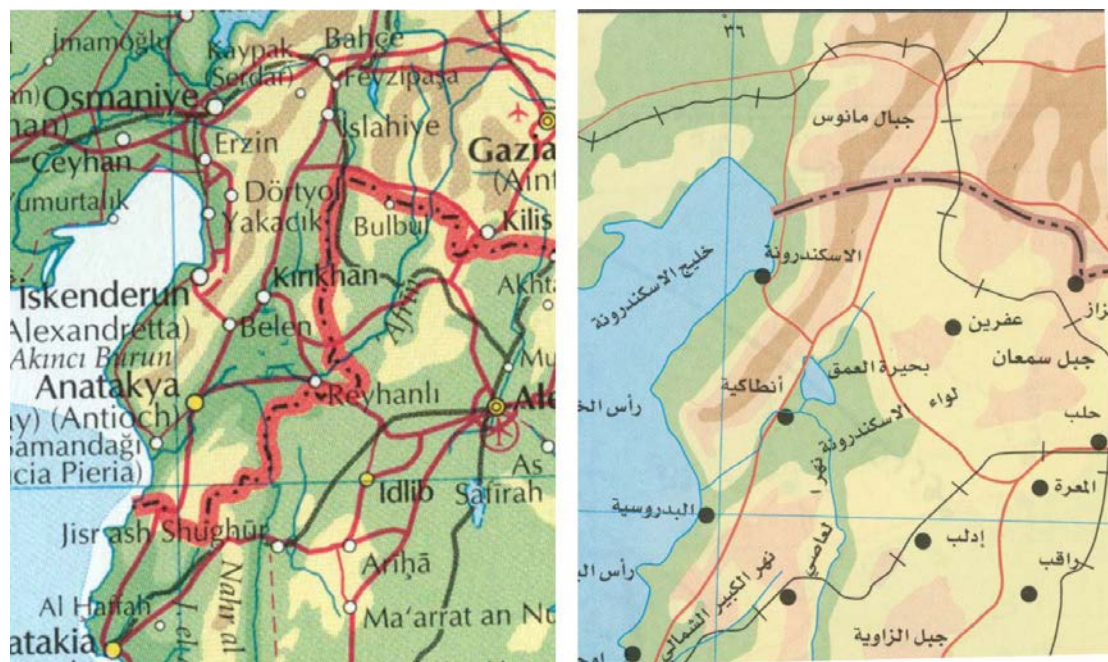


Figure 7: Boundary line delimitation between Turkey and Syria. Sources: Collins Illustrated Atlas of the World, 1997 (left); Arabic Atlas (right)

4.4 Relevance of maps in boundary disputes

Maps are considered controversial evidence in Courts and Tribunals. They are considered weaker evidence than agreed coordinates and agreed physical boundary markers (Srebro, 2005 and 2007). Their value as evidence increases in the absence of documentation of coordinates and in the absence of physical boundary markers. Their value increases if they were agreed by the states between which the dispute regarding the boundary line exists. Their value increases in correlation with their quality and reliability. Reliability increases when the scale of the map is large and when the map meets internationally recognized high quality professional standards. The relevance of a map for use is relatively low if it was prepared before a relevant period, if the environment changed significantly and the map was not updated, and if the map was prepared long time after the relevant period. The value of an old map for evidence decreases through time because of variety of reasons, which may refer to the geodetic base, the scale, the cartographic projection, a poor accuracy of features, a poor accuracy of boundary delineation and a poor interpretation of the boundary line.

4.5 Examples of attitude to maps as evidence by ICJ and Tribunals

In the Temple Case between Cambodia and Thailand the Court doubted the value of the maps presented, but recognized the commitment of a state to its interpretation on its own map, so that in such case the map can be evidence against the publishing state. In the absence of better evidence the Court accepted a map in spite of its poor quality (ICJ, 1962).

Due to reliability problems and contradiction between maps, they were disqualified by the Tribunal in the Beagle Channel Award (ILR, 1977 vol. 52).

ICJ rejected maps in its decision in the Burkina Faso v Mali Case but accepted a map there being no other choice saying: "...where all other evidence is lacking, ... , the probable value of the IGN map becomes decisive" (ICJ, 1986).

The Tribunal in the Arbitration between Israel and Egypt discussed the issue of the scale of a map and didn't accept a map in the apparent absence of boundary pillars or other physical marker remnants. The Tribunal stated: "The Tribunal does not accept these map based indications to be conclusive, since the scale of the map (1:100,000) is too small to demonstrate a location on the ground as exactly as required..." (Award of the Egypt-Israel Arbitration Tribunal, 29 September 1988 Para. 182). On the other hand, the Tribunal says: "Maps can be of some assistance when they show straight lines through a number of boundary pillars" (Ibid).

5. Conclusion

Map makers use basic components of maps like symbols, colors and names for the cartographic representation of geographic information. These tools, in addition to map features, with emphasis on boundary lines, are used for map elements which have political meaning. Map makers may misuse or distort such presentation for political messages. The relevance of maps as evidence in courts is controversial. Their value increases with high quality and reliability and acceptance by both sides and decreases by poor quality and not being up-to date.

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